

(5.3) Part D: Putting it all together!

Function & Describe the Transformations	List the Transformations	Vertex	Axis of Symmetry	Optimal Value/Max or Min
1) $2(x-3)^2+1$	Horizontal translation 3 units right Vertical translation 1 unit down Stretch by 2	$(3,-1)$	$x=3$	-1 min
2) $y=-(x+3)^2+7$	Horizontal translation 3 units left Vertical translation 7 units up Reflection	$(-3,7)$	$x=-3$	7 max
3) $y=1/3(x-8)^2+4$	Horizontal translation 8 units right Vertical translation 4 units up Stretch by 1/3	$(8,4)$	$x=8$	4 min
4) $y=-1/2(x-6)^2+10$	Horizontal translation 6 units right Vertical translation 10 units up Reflection Stretch by 1/2	$(6,10)$	$x=6$	10 max

When applying several transformations, read the relation from **left to right**, and apply the transformations in that order.

Inside the brackets → shift left or right *opposite* direction as sign.

Outside the brackets → shift up or down *same* direction as sign.

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1. Graph using transformations:

$$y = \frac{1}{2}(x+5)^2 + 2$$

List the transformations in order:


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2. Graph using transformations:

$$y = -2(x+3)^2 + 1$$

List the transformations in order:


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Homework

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q. 1-7, 11,14

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